



**US Army Corps
of Engineers®**
Engineer Research and
Development Center

Port of Los Angeles Inner Cabrillo Beach Water Quality Study

Description

The Port of Los Angeles (POLA) has requested the US Army Engineer Research and Development Center (ERDC) develop a scope of work for investigating methods for improving circulation and water quality in the swash zone along the inner Cabrillo Beach. An interdisciplinary team has been formed between the Coastal and Hydraulics Laboratory and the Environmental Laboratory. Two numerical models of the POLA system that have been used in the past to assess impacts of harbor changes will be employed in this study. The CH3D (Curvilinear Hydrodynamics in Three Dimensional Model) will generate three-dimensional circulation values for driving the water quality model CEQUAL-ICM. Additionally, physical modeling will be conducted to simulate tidal water surface variation.



Inner Cabrillo Beach, POLA, CA

Objective

The objective of this study is to investigate and recommend one or more alternatives as the most efficient means to improve circulation and water quality in the swash zone on the Inner Cabrillo Beach.

Issue

The inner Cabrillo Beach has persistent elevated bacterial contamination problems, which occur winter and summer. Findings to date indicate that contamination in the swash and near beach zone is within several feet of the shoreline in ankle-deep water where daily water samples are taken. Probable sources and mechanisms include (a) several hundred birds, leaking sewers and storm drains, (b) overwash of the beach face from high swell, tide, and storm events that carries bird guano into the nearshore waters, and (c) possible lack of sufficient circulation in very shallow water to adequately move contaminants to deeper water and dilute them. Contamination is concentrated mainly in the swash zone, with fall-off in deeper water where circulation is good and offshore waters are clean except for a few days after storms.

Sponsors

US Army Engineer District, Los Angeles (SPL)

Point of Contact

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